An analytical study of Indian agriculture crop production and export with reference to wheat

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Abstract

Agriculture is an important sector in India. It is indispensible for the sustenance and growth of the Indian economy. On an average, about 70% of the households and 10% of the urban population are dependent on agriculture as their source of livelihood. Today, India is a major supplier of several agricultural commodities like tea, coffee, rice, spices, oil meals, fresh fruits, fresh vegetables, meat and its preparations and marine products to the international market. India is a large producer of several agricultural products.

In terms of quantity of production, India is the top producer in the world in milk and second largest in wheat and rice. Agricultural production is prone to several risks which affect both producers and consumers. In order to enhance investment and achieve a sustained increase in production, coherent and integrated long-term strategies and policies are required to reduce risk aversion and build flexibility among Indian rural producers. There is a need to provide remunerative prices for farmers in order to increase the incomes of farmers. In this research paper researcher's objective is to study the major agriculture crops production, export and import of agriculture crop wheat.

Keywords: Agricultural production, wheat export, agriculture sector, agriculture crops.

Introduction

India is one of the largest producers of agriculture production in the world. It is the second largest producer in the wheat and rice. Wheat cultivation in India traditionally has been dominated by the northern region of India. The northern states of Punjab and Haryana Plains in India have been prolific wheat producers. While this cereal grass has been studied carefully in the past, recent years of painstaking research by India's finest scientific talent have paid off with the development of distinctly superior varieties of Durum Wheat.

Hypothesis of the study

- India is one of the largest producers of wheat in the world but in production of wheat, India is not a large exporter.

Objective of the study are:
The primary objective of this study is:

1. To study the Indian agricultural crop production i.e. wheat.
2. To study the Indian export of agriculture crop wheat.

Research Methodology

Secondary data: Secondary data, on the other hand, is basically primary data collected by someone else. Researchers reuse and repurpose information as secondary data because it is easier. Secondary data has been …..…… from APEDA Agri Exchange and MSAMB, DGCIS Annual Export, Database of National Horticulture Board, Ministry of Agriculture, Govt. of India, Food and Agricultural Organization (FAO), UN Comtrade, as reported by the importing countries etc.

Trend line: A trend line is a curved line that is most useful when data values rise or fall at increasingly higher rates. We cannot create trend line if the data contains zero or negative values. In this present research, a trend line is used to illustrate the increasing production of agriculture crop wheat. Note that the R-squared value greater than or equal to 0.80 is better to interpreting our results, which means the line fits on the data perfectly. The trends are those where the data rises or falls not at a steady rate, but at an increasing rate.

Statistical tools and techniques: For measuring various phenomena and analyzing the collected data effectively and efficiently to draw sound conclusions, certain statistical techniques were used. Trend analysis, graphical analysis and ANOVA (Analysis of Variance), descriptive statistics like as Mean, Variance and Standard deviation etc. have been used for the testing of hypothesis. Tools like as SPSS (Statistical Package for Social Science) 20.0 version and MS-Excel for analysis purpose were also used.

Cultivation of wheat: This hard wheat is cultivated in clayey soil and is highly sought after for its physical characteristics. Its high gluten strength and uniform golden colour makes it ideal for bread making and pasta preparation unlike the softer commercially high yielding wheat which lacks the strength and consistency of durum. Today, India is exporting sufficient quantities of all types of wheat and extensive research efforts are underway for improving its cereals and grain output in the years to come. Wheat cultivation has traditionally been dominated by the northern region of India.

The northern states of Punjab and Haryana Plains in India have been prolific wheat producers. While this cereal grass has been studied carefully in the past, recent years of painstaking research by India's finest scientific talent has paid off with the development of distinctly superior varieties

of Durum Wheat. With a production reaching ten times in past five years, India is today the second largest wheat producer in the whole world. Various studies and researches show that wheat and wheat flour play an increasingly important role in the management of India's food economy.

Varieties of wheat: The main varieties of wheat grown in India are as follows VL-832,VL-804, HS-365, HS-240 , HD2687,WH-147, WH-542, PBW-343, WH-896(d), PDW-233(d), UP-2338, PBW-502, Shresth (HD 2687), Aditya (HD 2781), HW-2044, HW-1085, NP-200(di), HW-741.

Areas of cultivation under wheat: Major wheat growing states in India are Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, Bihar and Gujarat.

India facts and figures of wheat: World trade in wheat is greater than for all other crops combined. Demand of India's wheat in the world shows a rising trend. The country has exported 55, 62,374.75 MT of wheat to the world for the worth of Rs. 9,261.60 crores during the year of 2013-14. Major Export Destinations of wheat in the year 2013-14 are Bangladesh, Korea Republic, United Arab Emirates, Indonesia, Djibouti, Yemen Republic and Oman.

Results

India is the second largest producer of Wheat production in the world. China is number one producer of wheat in the world. United States is in third position of wheat production in the world. India shows the increasing trend of wheat production.

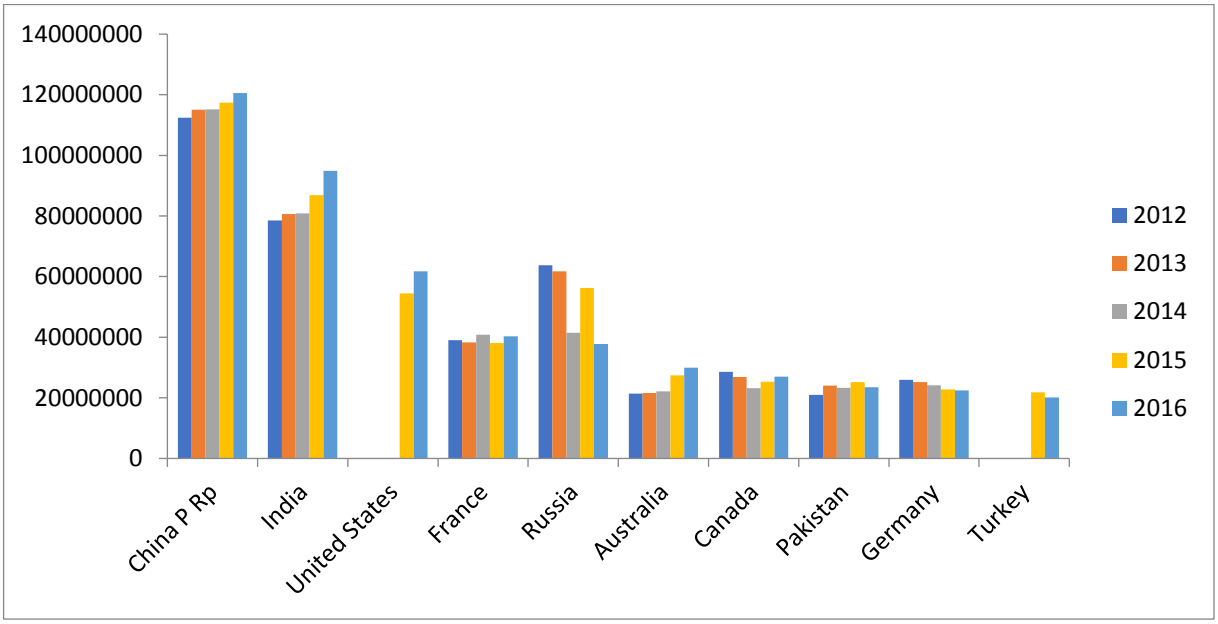

Figure 1: International production of Wheat in MT

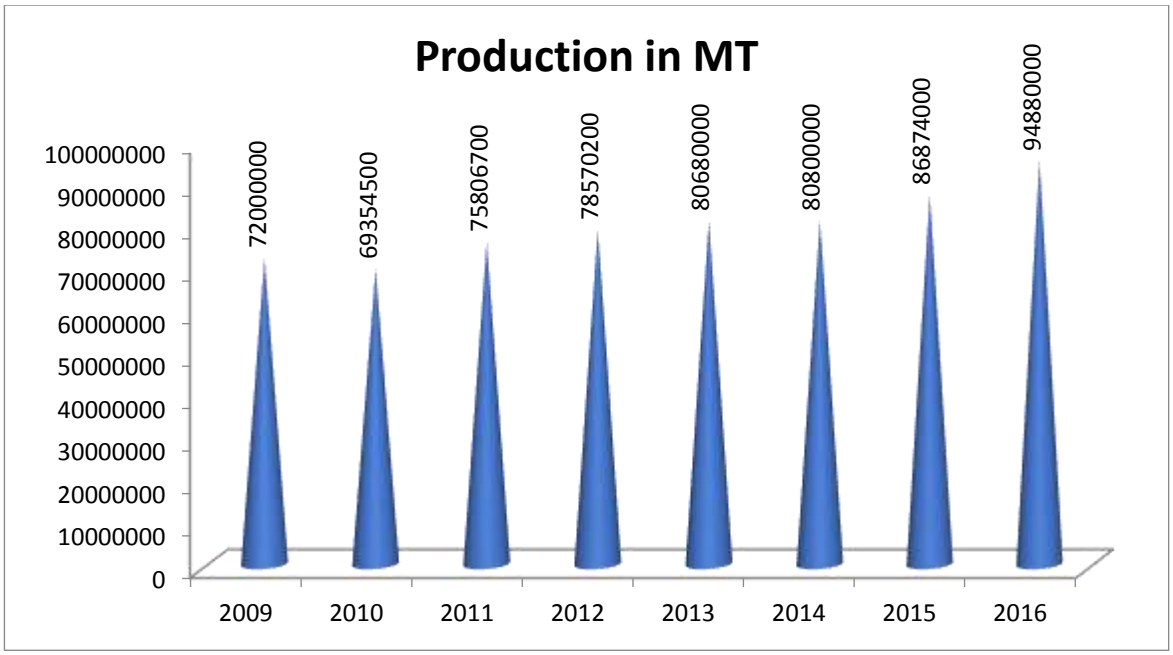

Figure 2: International Production of Indian crop Wheat

International Production of Indian agriculture crop is wheat. Graphs with curved trend lines are generally used to show a polynomial trend. This production of wheat shows the second order polynomial trend in the given dataset. This trend is increasing in order and production of wheat is growing continually from the year 2006 to the year 2012. R-squared is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determinations for multiple regressions. The value R-square is a fraction between 0.0 and 1.0 and has no units. If R-square value is 0 means that knowing X does not help you predict Y.

There is no linear relationship between X and Y and the best-fit line is a horizontal line going through the mean of all Y values. When R-square equals 1, all points lie exactly on a straight line with no scatter. Knowing X lets you predict Y perfectly. Also, R-square value is greater than 0.80 said to the beat fit of the data. Here the R-square value 0.938 is greater than desired level, so this trend line is best fitted to the given dataset.

Table 1
International production of Wheat in MT

Country	2012	2013	2014	2015	2016
China P Rp	112464292	115115364	115181303	117410300	120580000
India	78570200	80680000	80800000	86874000	94880000
United States	0	0	0	54413300	61755240
France	39006400	38332200	40787000	38037000	40300800
Russia	63765100	61739800	41507600	56240000	37719640
Australia	21420200	21656000	22138000	27410100	29905009
Canada	28611100	26847600	23166800	25261400	27012900
Pakistan	20958800	24033000	23310800	25213800	23473000
Germany	25988600	25192400	24106700	22800000	22432000
Turkey	0	0	0	21800000	20100000

Source: Food & Agricultural Organization (FAO)

Table 2
International Production of Indian crop Wheat

Year	Production in MT	Share in %
2009	72000000	11.48
2010	69354500	14.49
2011	75806700	15.6
2012	78570200	14.82
2013	80680000	14.83
2014	80800000	15.63
2015	86874000	12.34
2016	94880000	14.14

Source: Food & Agricultural Organization (FAO)

Table 3
Indian production of Wheat

Year	Production (In MT)
2009-10	69,150.00
2010-11	75,620.00
2011-12	78,360.00
2012-13	80,471.00
2013-14	80,557.10
2014-15	86,870.00
2015-16	97,880.00
2016-17	97,113.60

Source: Ministry of Agriculture

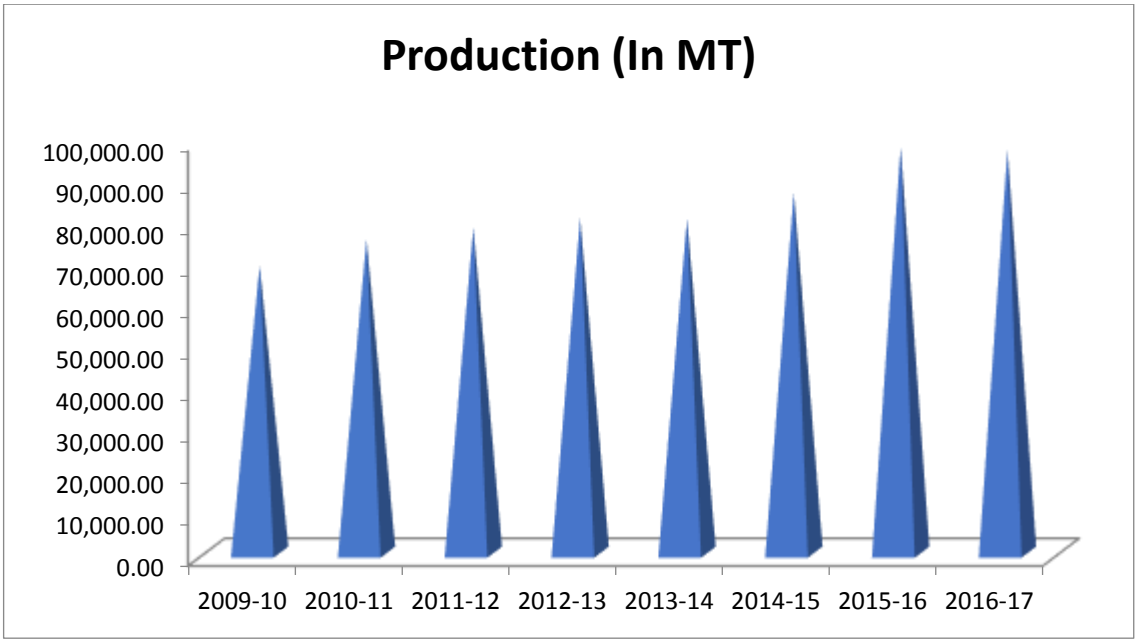

Figure 3: Indian production of Wheat

Observations: In the above figure, the Indian production of agriculture crop Wheat. Researcher see that the curved trend lines which is show a polynomial trend line in Indian production of agriculture crop wheat. This production of wheat shows the second order polynomial trend in the given dataset. This polynomial trend is showing some fluctuations in production of wheat. The year 2015-16 shows the highest production of wheat i.e. 97880 MT. after the year 2015-16 the production of wheat goes decreases by 766.4 MT. From the year 2013-14 to the year 2015-16 the Indian production of wheat is steadily increasing.

Conclusion

In the above data analysis, researchers demonstrate that assumption of India is one of the largest producers of wheat in the world but in production of wheat, India is not a large exporter. In figure 1, India is the largest producer of wheat and Indian production of wheat shows linear relationship but in figure 4, India is not much large exporter of agriculture crop wheat. India needs to improve the export strategies and increase the export of agriculture crop wheat.

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